

IN THE SPECIFICATION

Please amend the paragraph at page 1, line 5, through page 1, line 11, with the following:

--This application is ~~based upon~~ a divisional- of application Serial No.09/928,211, filed August 13, 2001, and claims the benefit of priority from the prior Japanese Patent Applications No. 2000-245873, filed August 14, 2000; No. 2000-375144, filed December 8, 2000; and No. 2001-177308, filed June 12, 2001, each of which is incorporated herein by reference.--

Please amend the paragraph at page 25, line 2, through page 25, line 19, with the following:

--One detection element 1031 1032 has a sensitivity range having a width of 0.5 mm in the slice direction and a width of 1 mm in the channel direction. The other detection element 1031 has a sensitivity range having a width of 1 mm in the slice direction and a width of 1 mm in the channel direction.--

Please amend the paragraph at page 25, line 8, through page 25, line 19, with the following:

--For example, 16 0.5-mm wide detection elements 1031 1032 are arranged in the ~~channel~~ slice direction  $\in S$ . The 16 detection elements 1031 1032 arranged in the ~~channel~~ slice direction  $\in S$  will be referred to as a first detection element array ~~group~~ 1033. A plurality of ~~arrays~~ of 1-mm wide detection elements 1032 1031 are arranged in the slice direction  $S$  in a number smaller than the number of ~~arrays~~ of detection elements 1031 1032, e.g., 12, on each side of the first detection element array 1033. The 12 detection elements 1032 1031 arranged in the ~~channel~~ slice direction  $\in S$  will be referred to as a second detection element array ~~group~~ 1034.--

Please amend the paragraph at page 25, line 20, through page 25, line 25, with the following:

--In this embodiment, the number (e.g., 16) of detection elements ~~1031~~ 1032 arranged in the ~~channel slice~~ direction ~~C S~~ is larger than the number (e.g., 12) of detection elements ~~1032~~ 1031 arranged on either side and smaller than the total number (e.g., 24) of detection elements ~~1032~~ 1031.--

Please amend the paragraph at page 28, line 11, through page 28, line 23, with the following:

--In the radiation detector 103, the first detection element array group 1033 constituted by 0.5-mm wide detection elements ~~1031a~~ 1032 converts X-ray detected near the central portion in a slice direction A into an analog electrical signal, whereas the second detection element array group 1034 constituted by 1-mm wide detection elements ~~1032~~ 1031, which are wider than the detection elements ~~1031a~~ 1032, converts the remaining X-rays into an analog electrical signal. That is, the first detection element array group 1033 acquires 2D projection data and converts it into an analog electrical signal while keeping high resolution as compared with the remaining X-rays.--

Please amend the paragraph at page 29, line 13, through page 29, line 16, with the following:

--In imaging 16 0.5-mm thick slices, data from ~~which~~ 16 0.5-mm thick tomographic images can be reconstructed ~~can be~~ and acquired by individually reading out electrical signals from the 0.5-mm wide detection elements ~~1031~~ 1032.--

Please amend the paragraph at page 29, line 17, through page 29, line 26, with the following:

--In imaging 16 1-mm thick slices, electrical signals are simultaneously read out from pairs of adjacent 0.5-mm wide detection elements ~~1031~~ 1032 so as to handle each pair as a

single element. In addition, electrical signals are individually read out from four 1-mm wide detection elements ~~1032~~ 1031 on each of the two sides near the center line, i.e., a total of eight detection elements. With this operation, data from ~~which~~ 16 1-mm thick tomographic images can be reconstructed ~~can be~~ and acquired.--

Please amend the paragraph at page 29, line 27, through page 30, line 7, with the following:

--In imaging 32 1-mm thick slices, electrical signals are simultaneously read out from pairs of adjacent 0.5-mm wide detection elements ~~1031~~ 1032 so as to handle each pair as a single element. In addition, electrical signals are individually read out from the 1-mm wide detection elements 1032. With this operation, data from ~~which~~ 32 1-mm thick tomographic images can be reconstructed ~~can be~~ and acquired.--

Please amend the paragraph at page 33, line 21, through page 34, line 9, with the following:

--As described above, the X-ray CT apparatus of this embodiment can acquire various images from one volume data, and the following effects can be obtained by using the radiation detector 103 according to the above description. The size of voxel data constituting the above volume data changes depending on the geometry of the system, data acquisition speed, and the like, and also greatly depends on the sizes of the detection elements 1031 and 1032 constituting the radiation detector 103. According to the radiation detector 103 of this embodiment, since a plurality of arrays (16 arrays) of narrow detection elements ~~1031~~ 1032 are prepared, for example, a resolution of about 0.5 mm x 0.5 mm X 0.5 mm can be attained at minimum with respect to voxel data, and relatively wide range can be imaged. That is, a wide imaging range and high resolution are maintained.--